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10/006,380	12/10/2001	Takeyoshi Isogai	111382	8302

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EXAMINER

LAZOR, MICHELLE A

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,380

Applicant(s)

ISOGAI ET AL.

Examiner

Michelle A Lazor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1 1/2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. Specification is objected to for minor informalities. There were several typos found in the specification (page 21, paragraph 53, line 4 and page 23, paragraph 55, line 12). Applicant is requested to review the specification and correct the minor informalities in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 3, 5 – 8, and 24 – 26 are rejected under 35 U.S.C. 102(b) as being anticipated by White et al. (U.S. Patent No. 6371339).

Regarding Claims 1 – 3, White et al. disclose a fluid supply device operable to supply a highly viscous fluid; a delivery nozzle from which the highly viscous fluid is delivered; a screw pump between said fluid supply device and said delivery nozzle, including a stationary pump housing having a rotatable screw; a screw chamber having a circular shape in transverse cross section, said screw pump further including a screw which is substantially fluid-tightly and disposed within said pump housing such that said screw and said pump housing are rotatable relative to each other, said pump control device including a pump drive device operable to rotate said pump housing and said screw relative to each other (Figures 1A – 1C; column 4, lines 32 – 43 and column 5, lines 3 – 18); and a pump control device operable to control said pump

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(column 8, lines 51 – 61). Thus White et al. disclose all the limitations of Claims 1 – 3, and anticipate the claimed invention.

Regarding Claims 5 – 7, White et al. disclose said delivery nozzle to extend from one end of said screw pump, coaxially with said screw pump; wherein said fluid supply device is a fluid supply device of a pressurizing type arranged to pressurize the highly viscous fluid and feed the pressurized highly viscous fluid to said pump, which includes a container accommodating a mass of the highly viscous fluid; a compressed-air supply device operable to introduce a compressed air into an upper air chamber in said container; and a supply passage connecting a lower end of said container and a first end portion of said screw pump opposite to a second end portion of said screw pump from which said delivery nozzle extends (Figures 1A – 1C; column 4, lines 32 – 48). Thus White et al. disclose all the limitations of Claims 5 – 7, and anticipate the claimed invention.

Regarding Claim 8, White et al. disclose a screw-rotating device including a rotary shaft (46); and a sealing device interposed between said rotary shaft and said pump housing, to maintain fluid tightness there between while allowing rotation of said rotary shaft (column 4, line 63 – column 5, line 2). Thus White et al. disclose all the limitations of Claim 8, and anticipate the claimed invention.

Regarding Claim 24, White et al. disclose a support member, and a relative-movement device operable to move said support member and an object relative to each other in a direction parallel to a working surface of said object on which the highly viscous fluid is delivered from said delivery nozzle, and in a direction perpendicular to said working surface (column 4, lines 48

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– 62). Thus White et al. disclose all the limitations of Claim 24, and anticipate the claimed invention.

Regarding Claim 25, White et al. disclose said fluid supply device is a fluid supply device of a pressurizing type arranged to pressurize the highly viscous fluid and feed the pressurized highly viscous fluid to said pump (column 4, lines 44 – 48), said apparatus further comprising a synchronous controller capable of operating said fluid supply device of the pressurizing type, in synchronization with an operation of said pump under the control of said pump control device (column 8, lines 51 – 61). Thus White et al. disclose all the limitations of Claim 25, and anticipate the claimed invention.

Regarding Claim 26, White et al. disclose said pump control device includes a reverse-operating portion operable to operate said pump by a predetermined amount in a reverse direction opposite to a forward direction after termination of an operation of said pump in said forward direction to feed the highly viscous fluid to said delivery nozzle (column 8, lines 51 – 61). Thus White et al. disclose all the limitations of Claim 26, and anticipate the claimed invention.

4. Claims 1 – 19 and 21 – 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Chikahisa et al. (PCT/JP99/01611)

Regarding Claims 1 – 4, Chikahisa et al. disclose a fluid supply device operable to supply a highly viscous fluid; a delivery nozzle from which the highly viscous fluid is delivered; a screw pump between said fluid supply device and said delivery nozzle, including a stationary pump housing having a rotatable screw, or a stationary screw having a rotatable pump housing (page 33, lines 1 – 19); a screw chamber having a circular shape in transverse cross section, said screw

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pump further including a screw which is substantially fluid-tightly and disposed within said pump housing such that said screw and said pump housing are rotatable relative to each other, said pump control device including a pump drive device operable to rotate said pump housing and said screw relative to each other (Figures 1 and 2; page 18, line 5 – page 19, line 19); and a pump control device operable to control said pump (page 34, lines 5 – 9). Thus Chikahisa et al. disclose all the limitations of Claims 1 – 3, and anticipate the claimed invention.

Regarding Claims 5 – 7, Chikahisa et al. disclose said delivery nozzle to extend from one end of said screw pump, coaxially with said screw pump; wherein said fluid supply device is a fluid supply device of a pressurizing type arranged to pressurize the highly viscous fluid and feed the pressurized highly viscous fluid to said pump, which includes a container accommodating a mass of the highly viscous fluid; a compressed-air supply device operable to introduce a compressed air into an upper air chamber in said container; and a supply passage connecting a lower end of said container and a first end portion of said screw pump opposite to a second end portion of said screw pump from which said delivery nozzle extends (Figure 1; page 23, line 21 – page 24, line 15). Thus Chikahisa et al. disclose all the limitations of Claims 5 – 7, and anticipate the claimed invention.

Regarding Claim 8, Chikahisa et al. disclose a screw-rotating device including a rotary shaft (2135); and a sealing device interposed between said rotary shaft and said pump housing, to maintain fluid tightness there between while allowing rotation of said rotary shaft (page 22, line 23 – page 23, line 20). Thus Chikahisa et al. disclose all the limitations of Claim 8, and anticipate the claimed invention.

Regarding 9 and 10, Chikahisa et al. disclose a fluid supply device which includes a container, said container including a supply portion having an opening from which the highly viscous fluid is supplied, and said screw is fixed to said supply portion of said container; wherein said supply portion of said container consists of a cylindrical portion extending from one end of a body of said container, and said screw is fixedly fitted at a proximal end thereof in a first part of said cylindrical portion, said opening being formed through a second part of said cylindrical portion which is located nearer to said body than said first part (Figures 1 and 2). Thus Chikahisa et al. disclose all the limitations of Claims 9 and 10, and anticipate the claimed invention.

Regarding Claim 11, Chikahisa et al. disclose a machine frame, wherein said pump housing is held by the machine frame such that said pump housing is rotatable and is not axially movable relative to said machine frame, and said container is removably mounted on said machine frame such that said screw is fitted in to said pump housing when said container is mounted on the machine frame, and is removed from the pump housing when the container is removed from the machine frame (Figure 1; page 6, paragraph 21). Thus Chikahisa et al. disclose all the limitations of Claim 11, and anticipate the claimed invention.

Regarding Claims 12, 13, and 14, Chikahisa et al. disclose a machine frame and a nozzle holding member mounted on the machine frame, and wherein said delivery nozzle is rotatably held by said nozzle holding member further comprising a nozzle rotating device operable to rotate said delivery nozzle relative to said container and said machine frame; and wherein said pump housing and said delivery nozzle are rotatably held by the machine frame and said pump housing is rotatably fitted in said delivery nozzle (Figure 1; page 21, line 24 – page 23, line 5).

Thus Chikahisa et al. disclose all the limitations of Claims 12, 13, and 14, and anticipate the claimed invention.

Regarding Claim 15, Chikahisa et al. disclose a delivery-amount detecting device operable to detect an amount of delivery of the highly viscous fluid from said delivery nozzle onto an object, and said pump control device controls said pump such that the amount of delivery of the highly viscous fluid detected by said delivery-amount detecting device is adjusted to a desired value (page 29, line 23 – page 30, line 10). Thus Chikahisa et al. disclose all the limitations of Claim 15, and anticipate the claimed invention.

Regarding Claims 16 and 17, Chikahisa et al. disclose a gap-defining portion which is disposed so as to extend in a direction of extension of the delivery nozzle, such that a free end of said gap-defining portion is located ahead of a free end of the delivery nozzle in said direction of extension and such that said gap-defining portion is moved with the delivery nozzle in said direction of extension, further comprising a machine frame, a biasing device, and a stopper device, and wherein at least said delivery nozzle and said gap-defining portion are movable relative to said machine frame in an axial direction of said delivery nozzle, and are biased by said biasing device in said axial direction from a proximal end toward a delivery end of said delivery nozzle, said gap-defining portion and said delivery nozzle being normally held under a biasing action of said biasing device, at respective positions which are determined by said stopper device (page 20, line 21 – page 21, line 13). Thus Chikahisa et al. disclose all the limitations of Claims 16 and 17, and anticipate the claimed invention.

Regarding Claim 18, Chikahisa et al. disclose said pump includes a pump housing, and said pump housing and said delivery nozzle are not movably relative to each other and are

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movable together relative to said machine frame in said axial direction (page 21, line 24 – page 23, line 8). Thus Chikahisa et al. disclose all the limitations of Claim 18, and anticipate the claimed invention.

Regarding Claim 19, Chikahisa et al. disclose a temperature control device operable to control a temperature of a mass of the highly viscous fluid, at least at a portion of the mass which is moved through said delivery nozzle (page 43, lines 7 – 21). Thus Chikahisa et al. disclose all the limitations of Claim 19, and anticipate the claimed invention.

Regarding Claims 21 – 23, Chikahisa et al. disclose said delivery nozzle to have a plurality of delivery tubes parallel to each other, further comprising a nozzle rotating device operable to rotate said delivery nozzle about an axis thereof which is parallel to said plurality of delivery tubes (page 17, line 20 – page 19, line 12), further comprising a controller operable to control said nozzle rotating device according to a predetermined control program (page 33, lines 1 – 19). Thus Chikahisa et al. disclose all the limitations of Claims 21 – 23, and anticipate the claimed invention.

Regarding Claim 24, Chikahisa et al. disclose a support member, and a relative-movement device operable to move said support member and an object relative to each other in a direction parallel to a working surface of said object on which the highly viscous fluid is delivered from said delivery nozzle, and in a direction perpendicular to said working surface (page 15, line 19 – page 16, line 21). Thus Chikahisa et al. disclose all the limitations of Claim 24, and anticipate the claimed invention.

Regarding Claim 25, Chikahisa et al. disclose said fluid supply device is a fluid supply device of a pressurizing type arranged to pressurize the highly viscous fluid and feed the

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pressurized highly viscous fluid to said pump (page 23, line 21 – page 24, line 15), said apparatus further comprising a synchronous controller capable of operating said fluid supply device of the pressurizing type, in synchronization with an operation of said pump under the control of said pump control device (page 33, lines 1 – 19). Thus Chikahisa et al. disclose all the limitations of Claim 25, and anticipate the claimed invention.

Regarding Claim 26, Chikahisa et al. disclose said pump control device includes a reverse-operating portion operable to operate said pump by a predetermined amount in a reverse direction opposite to a forward direction after termination of an operation of said pump in said forward direction to feed the highly viscous fluid to said delivery nozzle (page 43, line 20 – page 44, line 22). Thus Chikahisa et al. disclose all the limitations of Claim 26, and anticipate the claimed invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikahisa et al. in view of Wabnitz (U.S. Patent No. 2976392).

Chikahisa et al. disclose all the limitations of Claim 19 including said pump to include a pump housing and a screw disposed within said pump housing such that said screw and said pump housing are rotatable relative to each other and a temperature controller or regulator (2158), but do not specifically disclose said temperature control device to include a gas passage

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through which a gas is circulated. However, Wabnitz discloses a heat exchanger with a liquid or gas heat exchanging fluid (column 18, line 73 – column 19, line 5). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to circulate gas around the pump housing to provide “good efficiency and great uniformity of temperature without the danger of heat accumulations” (column 19, lines 2 – 4).

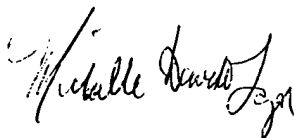
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Engel (U.S. Patent No. 5564606) disclose a feed screw pump for viscous materials (Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle A Lazor whose telephone number is 703-305-7976. The examiner can normally be reached on Mon - Thurs 6:30 - 4:00, Fridays 6:30 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in cursive script, appearing to read "Michelle A Lazor".